



THOMAS G. NEWMAN, Editor.

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Sunny May Day, with whitest clouds,
And twittering swallows high in air,
A timid zephyr from the South,
And fragrance, fragrance everywhere.
Young grass, pink buds; all bees astir;
With plow, afield the swain I spy,
And, in her door, the young, good wife
To baby singing lullaby.

—C. G. Blanden.

Fanny Field's "Practical Turkey Raising" is a new book which tells all about rearing turkeys from the egg to the mature bird. If you want to make it profitable to rear these birds, send 25 cents to this office for the book.

Rain came very opportunely last week in this locality. Nature responded promptly to the baptism, and appears in its gayest dress, flowers decking field, hillside and valley, and the bees are apparently enjoying the anticipation of a plentiful supply of the nectar which they so much enjoy, gathering and hoarding up, in their waxen cells of virgin comb.

Bees Roaring in Winter.—On page 297, Mr. Demaree proposes that those interested in the settling of this question, should write a postal card to the BEE JOURNAL to be tabulated and published, giving the result of their actual knowledge or experience on the subject. By an oversight, this was omitted last week. We now approve of the method proposed, and will give the letters space and attention. Send them in at once.

Royal Jelly.—A correspondent desires us to explain the composition of royal jelly and its uses and effects upon the larval-queen. At the quarterly *Conversations* of the British Bee-Keepers' Association held in London, on April 20, 1887, Mr. T. W. Cowan, editor of the *British Bee Journal*, gave a very interesting address on this subject, which will be found on page 310. It will be read with more than ordinary pleasure by progressive apiarists.

Be Patient!—How often do we find some impetuous soul growling about the delay of receiving goods ordered, when there has not been sufficient time allowed to transport them from the dealer to the customer! Quite often, even before the complaint has had time to get to the dealer, the purchaser has received the goods, then he feels badly (if he has any conscience) for having used the unkind words, and has then to sit down and write an apology.

These things are aggravated, when in his impatience he has also written a complaint to the bee-paper where the dealer's advertisement appeared, and leads to still greater complications!

We now have a case in point. A purchaser wrote to us a long and bitter complaint, using very uncomplimentary language about the delay of receiving goods from one of our advertisers. We wrote to the advertiser and obtained a full statement of the case—saying he had positive proof that the goods were at the station as ordered by the purchaser, and the railroad company had notified the shipper as well as the consignee of the facts.

We wrote several letters to both parties, as there was also a financial dispute about it, and the upshot of the whole is a letter just received from the complainant, stating that he withdraws all complaints against the dealer, who has made a settlement in full with him.

Now, we protest against such impetuosity and carelessness; as well as against burdening us with complaints against our advertisers, which are merely the result of carelessness on the part of the customer, or a want of exercising due patience for the arrival of the goods ordered. We have enough to do with our legitimate business, and we have no relish for such unthankful and unnecessary work.

Then, again, many mistakes occur from not writing names and addresses plainly. We have a letter before us now, with the name of the writer so indistinct that we cannot read it at all. Another, with an order for goods without any attempt to give the name of the writer. Such carelessness is inexcusable, and is the cause of much confusion.

Small Loss in Winter.—The *Leader*, of Arcadia, N. Y., gives the following item about its apiarist:

On Nov. 19, 1886, E. D. Keeney put into winter quarters 316 colonies of bees. On May 2, 1887, after their confinement of 165 days, he took out 311 colonies, all in fine condition, there being a loss of less than 2 per cent. We doubt very much if there has been its equal in wintering in the State.

The losses have been very light both in winter and spring, and if the weather continues favorable, a good crop of honey may be expected.

Frank Leslie's Sunday Magazine for June completes the twenty-first volume of this much esteemed family visitor. The number is full of interesting contributions, and is as usual, beautifully illustrated. Among the important articles is one entitled: "A Visit to the Azores," which is accompanied by ten illustrations. Many miscellaneous articles of merit help to make up a number which ought to be welcomed heartily everywhere.

The Century Plant.—From California we learn that bees work on the flowers of *Agave Americana*, commonly called the century plant, and seem to be in great glee while thus occupied. It is a misapprehension that this plant has to be a hundred years old before it blooms. It is a common occurrence to see them bloom in California when they are from 10 to 15 years old. When once the flower stalk or shaft puts forth its asparagus-like head it shoots up rapidly, so that in a few weeks it is 25 or 30 feet high. To those who have not seen the plant, we do not know how we could better describe it than to say that it looks something like the Yucca mentioned in another column, with this exception, however, there are not so many leaves, and they are much more fleshy; the flowers are not borne in whorls as in the Yucca, but the shoots starts out like those of the Yucca, and from them again starts out smaller shoots taking about the same curve as the main one. On the latter the flowers appear. The main flower-stalk has the appearance of a huge lamp-post, and the flower stems look like chandeliers, and when in bloom the bees, when humming about its flowers, reminds one of moths flitting about the lights of a chandelier.

It is pretty certain that in California it will never be considered as a honey-plant of much importance, but we suppose that in Mexico, where they grow by the acre, it is valuable for the bees. In that country, we learn that by tapping the plant, it yields profusely of its sap, which the natives ferment into a beverage, and after partaking thereof, become good-natured and jolly to an inordinate degree.

Bees were Declared a Nuisance by the City Council of Arkadelphia, Ark., on May 5. This matter was referred to on page 279, where it was stated that some crank had charged the bees with eating up his young ducks, as well as eating up the peaches!! In the published report of the City Council meeting, the following occurs:

A resolution, introduced by Councilman Spencer, was adopted, to the effect that the rearing of bees within the city limits was a nuisance, and an ordinance was accordingly passed declaring the owning, keeping or rearing of bees in the city limits to be unlawful, and notifying all persons keeping or owning bees in the city to remove the same within thirty days from the passage of the ordinance, and fixing a fine of not less than \$5, nor more than \$25, for each day of refusal to so remove them.

A resolution also passed, instructing the City Marshal to notify all bee-keepers of the passage of the foregoing ordinance, and of their duty under it.

Major J. L. Witherspoon, ex-Attorney General of Arkansas (who stands at the head of the Bar of the State), has been employed to attend to the matter on behalf of the bees. He "enjoined" the City Council on the 9th inst., and the trial probably came up in "Chancery" on Monday, May 16. The National Bee-Keepers' Union backs up Mr. Z. A. Clark to fight the case on its merits. More anon.

The Kenton Bee-Hive is the name of a new monthly bee-paper of 12 pages published by Smith & Smith, Kenton, O., at 50 cents a year. The first number is on our desk, and makes a good appearance.

QUERIES

With Replies thereto.

[It is quite useless to ask for answers to Queries in this Department in less time than one month. They have to wait their turn, be put in type, and sent in about a dozen at a time to each of those who answer them; get them returned, and then find space for them in the JOURNAL. If you are in a "hurry" for replies, do not ask for them to be inserted here.—ED.]

Wintering Bees under a Kitchen.

Query 418.—Mr. A wants to try wintering his bees in his cellar, which communicates, by a stairway, with the kitchen above. 1. Will it be in any way a detriment to the health of his family to have his bees in the cellar? 2. How large a room must be partitioned off for 30 colonies? 3. Will it be any benefit to whitewash the room before putting in the bees?—H. D. S., Pa.

1. No. 2. 10x10x6 feet. 3. Yes.—J. P. H. BROWN.

1. It might prove to be a sad affair. 2. Large enough to contain them; and larger for future wants.—C. W. DAYTON.

1. No. 2. Ten or twelve feet square will do. 3. It would if there was a bad odor in the cellar.—G. L. TINKER.

1. I think not. 2. Large enough to get them in handily. 3. I think not.—W. Z. HUTCHINSON.

1. I think not. 2. It will depend upon the size of the hives. 3. It will be no detriment to whitewash it.—H. D. CUTTING.

1. I should say not, but I am not posted on hygiene. 2. I should not partition it off at all, as the whole cellar is as good if the temperature is right. 3. I do not see why it would.—G. M. DOOLITTLE.

If the bees are kept dry and in good health, I should have no fears of their presence under the kitchen doing any harm.—G. W. DEMAREE.

1. No, if decent ventilation is given. 2. As large as will allow of storage, depending upon the size of the hives. 3. It is always a benefit, sanitarially, to whitewash a cellar.—J. E. POND.

1. No. 2. Let him put the bees in, and partition the space afterwards with a heavy curtain, old carpets or anything. 3. It will not injure, but it is not of any particular benefit.—DADANT & SON.

1. No, if the air in the cellar is good as it ought to be for the bees. 2. It depends upon the size of the hives. I should want it large enough so that when the hives are piled up, I could get at the front of each. 3. I think it might.—C. C. MILLER.

1. No. 2. I cannot say. It depends. The temperature must be kept at 45° Fahr. 3. No.—A. J. COOK.

1. It would to some, but probably not to him, as there are very few persons who are injured by breathing the odor from bees. 2. Two or three times as large as the space occupied by the hives. 3. I guess it would not

do any harm or good to the bees.—JAMES HEDDON.

1. Probably not, if ventilated. 2. Hives vary in size; a sure plan would be to put in the bees first, and then partition them off; but why not have it large enough for future increase? 3. Any cellar may be whitewashed to advantage, but so far as the bees are concerned, it would make no difference.—THE EDITOR.

Dividing Colonies—Locating the Queen.

Query 419.—In dividing colonies for increase, or building up colonies in the spring, on the evening before transferring a frame or frames from hive to hive, should I place such in an empty body over the centre or side of the brood-nest, and leave them there all night, and put them in other hives before 9 o'clock in the morning? Would I be in danger of taking queens along? 2. What is the status of the queen in a hive, or on what frames may she be found at different times of the day?—W. B., Iowa.

1. No. Why? 2. There is no rule as for that.—JAMES HEDDON.

1. Some, but very little. 2. There is no rule. Some queens are easily disturbed, and when disquieted they often pass rapidly from one to another.—A. J. COOK.

1. No. 2. In the morning when it is cool, the queen will usually be on one of the middle frames of the brood-nest; but in the afternoon when warmer, she is oftener on one of the outside frames.—J. P. H. BROWN.

I would rather make the colonies in the evening than in the morning. Your plan is too much bother for me. Find the queen, then you will know where she is. That is my rule.—C. W. DAYTON.

It is always easy to find queens in dividing colonies, and to place them where wanted. The queen will nearly always be found on the frames of brood. It is even rare to find her on the sealed honey of a brood-comb. If the hive is carefully opened, always look for her first on the combs in which eggs are seen.—G. L. TINKER.

1. You would be in danger of making a complete failure of the whole business. 2. When you make a business of producing honey on business principles, you will not care on what frame she is just at each particular moment.—H. D. CUTTING.

1. I hardly know what you would gain by so doing. It would depend upon existing conditions whether the queen might be on one of the frames. 2. I do not know in what part of the brood-nest to look for a queen.—C. C. MILLER.

1. Your best way would be to find the queen, for she might not leave the frame by your proposed plan, and by using it the brood might be in danger of being chilled. 2. From 10 a.m. to 4 p.m. the queen is usually on one of the outside combs of brood, but not always.—G. M. DOOLITTLE.

1. I do not understand the object of leaving the frames in such a position over night. Queens must be looked up before removing the frame. 2. I have seen it stated that the queen

made the circuit of the brood-nest once in 24 hours, and at such and such hours, she might be found in such and such places. I have never noticed anything of the kind.—W. Z. HUTCHINSON.

1. I can see no reason for so doing. My advice is to adopt the nucleus plan of increase; the plan I made public some years ago, and which I believe is now generally used for increase. By that plan the maximum both of honey-gathering and brood-rearing is constantly kept up; this cannot be done by ordinary division. 2. This is one of those impracticable questions that "no feller" can answer. Ordinarily she will be found on or near empty cells.—J. E. POND.

1. Before removing frames of brood with adhering bees, I first look up the queen so as to make no mistakes. When I divide a colony with the view of making a new colony of one of the divisions, I do the work early in the morning, and at once. When selecting combs to make nuclei, or new colonies, I take such as out of which the young bees are cutting or hatching, as we say, in great numbers; in this lies the secret of forming nuclei or new colonies. I confine the bees to their new quarters the first day, releasing them just after sunset. 2. It depends upon the condition of the brood-nest. She will ordinarily be found wherever her duty leads her. If I always knew the precise condition of the brood-nest, I could guess pretty well where she might or might not be.—G. W. DEMAREE.

1. No. 2. Any one can guess, but no one knows. When you find the queen, you will know where she was each time, and probably not twice in the same place.—THE EDITOR.

Number of Frames for Comb Honey.

Query 420.—How many frames of the Gallup size would be best for producing comb honey, where the honey harvest continues from the last of May until the last of July, with generally a fall crop?—B., Iowa.

Nine frames—G. L. TINKER.

About 12.—J. P. H. BROWN.

About 9 in the spring, or before swarming; and 5 or 6 after.—W. Z. HUTCHINSON.

I have never used the Gallup frame, but I should think about 9 frames.—H. D. CUTTING.

I use 9, and consider them ample for any locality. With new swarms I use only 5.—G. M. DOOLITTLE.

We say 13 or 14 frames. Make your hives the same size as Doolittle's. See his pamphlet on "The Hive I Use."—DADANT & SON.

Ten until the harvest begins; 4 during the harvest; and 10 after the harvest, is my practice.—C. W. DAYTON.

Twelve frames before swarming, and 6 afterwards, as a rule. Comb honey production without the contraction system, would be to me like the play of "Othello" with Othello left out.—JAMES HEDDON.

I should prefer 12 frames, but should reduce—a la Heddon—to 7 or 8 when I added sections.—A. J. COOK.

I do not know. I use the standard Langstroth. Mr. Doolittle can answer understandingly, as he uses the "Gallup frame."—J. E. POND.

I think Mr. Doolittle uses Gallup frames, and I should place confidence in his answer. I do not think any of us yet know all we might about this matter.—C. C. MILLER.

I would want not less than 12 for such a honey harvest as you seem to have. By using a hive of the largest size, you could have it large or small, to suit the conditions, by simply using division-boards. A 10 frame Langstroth hive, properly made to "tier up," would just "fill the bill," if I had to make the choice for you.—G. W. DEMAREE.

Probably about 9 or 10 frames.—THE EDITOR.

Correspondence.

This mark ⊙ indicates that the apiarist is located near the center of the State named; ⊙ north of the center; ⊙ south; ⊙ east; ⊙ west; and this ⊙ northeast; ⊙ northwest; ⊙ southeast; and ⊙ southwest of the center of the State mentioned.

For the American Bee Journal.

Introducing Queens—Making Bees Stay

G. M. DOOLITTLE.

As the time of year for introducing queens is at hand, I wish to give a very simple plan of doing the thing, and one which so far has proved successful with me in every instance. If I had a very choice queen coming a long distance to me through the mails, I should use the "nucleus box" as described in a back volume of the BEE JOURNAL; for with this I do not consider a failure possible, although out of the thousands who have tried that plan, one has reported a failure with one queen. However, the nucleus-box plan is not quite as convenient as the one about to be described, nor can the whole operation be done at the same time as can this. The plan I wish to speak of is as follows:

Go to any hive from which is desired to remove the queen, and smoke the colony only enough to keep the bees quiet during the finding and removing of the queen, after which the frames are to be put back, and the hive closed. Before disturbing the hive at all to find the old queen, the bee-keeper should get the one to be introduced and have her with him in a cage. Having closed the hive, blow smoke into the entrance until the bees are heard roaring greatly, which shows that the fight is all taken out of them, when the smoking is to cease for a moment, and then pound on top of the hive with the fist about ten times. Now blow smoke again

as long as pounding continued, when the bee-keeper is to pound the same number of strokes again, and so on until the smoke has been given five times, and the same number of poundings are done.

In doing this pounding, only strike with force enough to thoroughly jar the hive, which is easily done without at all hurting the hand. As soon as the last pounding is finished, unstop the cage having the queen to be introduced, and hold the mouth of it to the entrance of the hive, when she, hearing the roaring of the bees inside, will immediately run in. As soon as she is well inside of the hive, give them another liberal smoking, and the operation of a direct and safe introduction is finished. If in time of scarcity of honey, this should be done about sundown, otherwise robber bees would gain access to the hive while the bees were in a defenseless condition. In fact I prefer to perform the operation near sundown at all times.

If all has worked as it does with me, the queen will be found laying the next morning, just as if that had always been her home.

My theory regarding why the plan is so eminently successful is, that the bees realize that they have had a "terrible shaking up, the same as would happen in their primitive state if the tree containing their home should be blown over. Their first anxiety then, after coming to their senses, would be for the queen. Well, before coming to their senses, in this case, the queen is run in and followed by smoke so that she assumes the same scent that the bees, hive and combs smell of, so that when they find her they do not realize that a change has been made.

MAKING DRIVEN SWARMS STAY.

Many seem to suppose that when a swarm of bees is driven from a hive, that the driven part must be put on the old stand, placing the old hive and contents on a new stand, otherwise the driven bees would mostly go back to the old hive. With no precaution this would undoubtedly be the case, but it is a very easy matter to make a driven colony of bees stay wherever one wishes. I often make swarms by driving, and as some of the readers of the BEE JOURNAL, who can be with their bees only in the morning or evening, may wish to do the same, I will describe how I manage. It is thus:

Go to any hive whose colony is about ready to swarm, and if in a box-hive, drum out the bees in the way given in any of the books while treating on transferring, but if in a movable-frame hive, as they will probably be, proceed as follows: Open the hive to see if there is plenty of unsealed honey, and if not, shave off the cappings of the cells along the top-bars of the frames, so the bees can easily fill themselves with honey, finding the queen at the same time and caging her on one of the frames. Now close the hive, and after blowing smoke in at the entrance, pound on it with the fist, as I stated in in-

troducing queens, except that it is to be kept up for three or four minutes, with no smoke except the first.

As soon as you have finished pounding, place a box and an inch board close to the hive; or, better still, have the box there to start with, when you are to open the hive and shake about three-fourths of the bees from the combs down in front of the box, into which they will readily enter. When you come to the frame having the queen, uncage her and let her run into the box. Having the queen and what bees you wish in the box, close the hive and take the box to the shade of some tree where it is to be left with the mouth or open side facing up and out, which is best accomplished by leaning it against something. Leave it thus for three-fourths of an hour, when the bees will be clustered the same as a swarm would be.

They can now be hived the same as any swarm, and will stay and work the same as if they had issued naturally. The old colony can be allowed to rear its own queen or have a queen-cell given them, the latter being preferred, as that does away with after-swarming.

If the bees are "drummed" from a box-hive, they are to be treated after they are in the box the same as the other. In some respects I like this plan for securing increase better than any other.

Borodino, ⊙ N. Y.

For the American Bee Journal.

The Next Michigan State Convention.

At our last annual meeting at Ypsilanti, in December, 1896, the desire was expressed that our next meeting be held in conjunction with that of the State Horticultural Association, and preferably at East Saginaw, Mich.; though it was left optional with the committee to change place and arrange time, if to consummate the joint meeting it was found necessary.

The arrangements favoring this plan are as follows: Many of our members are also interested in fruit culture. Such an arrangement would enable them to secure the benefits of both meetings with the least expenditure of time and money. Again, many topics are alike interesting and important to fruit-men and bee-keepers; such as the relation of bees and fruit, bees as fertilizers, etc. Thus it would be profitable to have at least one or two joint meetings, in which both societies should take an equal part. Lastly, with both associations meeting in one week at one place, we could almost surely secure reduced rates on the railroads. Last fall the fruit-men accomplished this, though the bee-men failed. Such commutation induces larger attendance, as seen at our Flint meeting three years ago; and so adds to the value and interest of our discussions.

I am happy to state that the arrangements have been fully and most satisfactorily made. Both associa-

tions will meet at East Saginaw, Mich., the second week of December, 1887. The State Horticultural Society will meet Monday evening, Dec. 5, and close Wednesday noon, Dec. 7. On Wednesday afternoon, and possibly evening, there will be a joint session of the two societies. The bee-keepers will continue in session all day Thursday and possibly Friday.

In publishing its own programme, each association will give a brief abstract of that of the other association; thus each association will be very widely advertised.

The East Saginaw people will furnish a free hall; will secure reduced rates at the hotels, and, more than all, will give a royal welcome. All this with reduced railroad rates will aid to make this a meeting of unusual importance. A hearty invitation is extended to those of Ontario and other States, to meet with us.

Will other bee-periodicals and agricultural papers please copy this, or give a notice of the arrangements?

A. J. Cook, Com.

Read at the British Bee-Keepers' Convention.

Food of the Queen-Larva, etc.

T. W. COWAN.

There is an important question I should like to bring before the meeting, and upon which a very interesting discussion might be started. It has reference to the food of the queen-larva (royal jelly), the food of the other larvæ, and also with respect to the digestion of such food. I am now in a position to give some recent investigations which will, I think, clear up those points conclusively.

We have been taught for some time that the food which is given to the worker and others is partly digested in the chyle-stomach of the worker-bee; for this digestion, and the providing of this food, the young bees act as nurses. Dufour was one of those who taught this, although Swammerdam alluded to it before; and we have always accepted the idea that the larvæ were fed with this semi-digested food. Leuckart was also a partisan of this theory. However, when the glands were discovered, Leuckart thought he was not quite satisfied with this theory of semi-digestion, and he suggested that the larvæ were fed with a secretion from the different glands.

In the honey-bee there are four pairs of glands; three pairs in the head, that is, two pairs in the upper part, and one pair in the jaws, and one pair in the thorax. Leuckart supposed that these glands furnished the food for the larvæ as well as the food for the queens. Schiemenz, who was a pupil of Leuckart, was induced to take up and investigate the matter thoroughly. He did so, with instructions from Leuckart to examine specially the functions of these glands in relation to the food, and he published the result of his researches in 1883. I have his work with all the drawings. He went into the subject very fully indeed, and it is the most

complete description of the glands we have. He came to the conclusion that the food was a secretion produced from the glands.

For some years since 1853 Schonfeld has been at work likewise on this subject. He described the digestive system of the honey-bee particularly in the *Bienenzeitung*, and his discoveries from 1854 to 1883. Below the honey-mouth (*Magenmund*) there is a neck which connects the honey-stomach with the chyle-stomach, and from this mouth into the chyle stomach there is a prolongation through which the honey and pollen passes from the honey-stomach into the chyle-stomach; and Schonfeld, by experiments and microscopical examination, showed that this internal prolongation could be turned inside-out or inverted so that the bee could disgorge the digested food from its stomach by way of the oesophagus into the cells.

These alleged discoveries were thought to be very singular by Leuckart, Fischer, Vogel, Dzierzon and others, but they continued to insist that the food of the bee was a secretion; some were going so far as to call it *Milchsaft*, or milk food.

Leuckart says that the food of the larvæ of the queen, workers and drones is exactly the same. But Leuckart, in 1858, discovered that the food of the larvæ of worker-bees was subject to some variation, that it was not always the same during the whole of its larval existence. For the first three days the food was liquid, and appeared like a secretion. After that pollen and honey were added to it, which could be detected by the microscope. The queen-larva, on the contrary, was fed with the same food throughout its larval existence, that is, from the very first day of the larva leaving the egg to the day it was sealed up; and he said it was owing to this that the queen was produced instead of a worker.

The weaning took place on the third day, and it was exactly at this time that the ovaries began to make their appearance in the female bee, and by changing the food in the case of a worker, this development was arrested and a worker produced, whereas by continuing the same food a queen was produced. The same took place with regard to the drone, except that of three days, the drone was fed on the same food for five days.

We have always hitherto been led to believe that this food was alike, at any rate during the first three days, and that the greater abundance given to the queen-larva produced the development more rapidly.

Dr. A. de Planta has been at work for two years in trying to settle the question by analyzing this food, and has had considerable difficulty in carrying out his investigations. Some idea may be formed of the magnitude of the work he has been engaged on when I say that he has had to operate upon 120 queen-cells, 4,000 drone-cells, and 10,000 worker-cells. I believe only one chemical analysis of the food has been made prior to this,

namely, by Schlossberger in 1871. He took all the food he could get hold of, put it together and analyzed it on the supposition that the food was the same all through. Dr. Planta was not satisfied with that, and wished to settle the point by analyzing the different foods separately, and his chemical experiments have confirmed step by step the observations of Schonfeld, and have shown him to be right.

Dr. Planta analyzed the substances contained in the queen-cells, worker-cells, and drone-cells, and the result of these investigations showed, as regards the different ingredients of the different foods, the following proportions:

| | | | |
|-----------------|-------|---|-----------------|
| Albumen..... | 46.5 | ¶ | ct. for queens. |
| " | 50.16 | " | workers. |
| " | 39.91 | " | drones. |
| Fatty Matters.. | 12.62 | ¶ | ct. for queens. |
| " | 6.84 | " | workers. |
| " | 7.85 | " | drones. |
| Sugar..... | 17.90 | ¶ | ct. for queens. |
| " | 27.65 | " | workers. |
| " | 1.17 | " | drones. |

The above tables refer only to dried food. As regards the water contained in each food, there is not a very great difference. The proportions are as follows:

| | |
|-------|-----------------------|
| 66.64 | per cent. for queens. |
| 71.09 | " workers. |
| 72.75 | " drones. |

These figures show that the food of the queen contains less water than that of the drones or workers; and I dare say all of you know that the food in a queen-cell is much stiffer in substance, and is able to stick to the top of the queen-cell hanging down and to support the grub.

With regard to albumen, you see the worker stands at the head, whilst in respect to fatty matter the queen is first, and the drones and workers in nearly equal proportions. In regard to sugar, the workers are first, then comes the queen, and the drones have very little indeed. Drones are the fewest in the hive, and I think we must not grudge them the small quantity of honey they take, seeing that they get so little sugar during their larval existence.

The figures I have given may not convey much to you, but with regard to richness of the food I may tell you that in 100 queen-cells there are 356 times more dry nutritive substances than there are in 100 drone-cells, or 232 times more than in 100 worker-cells.

Then Dr. Planta tried another experiment, namely, in order to judge upon an equal basis he compared the dry substance in 100 grammes of fresh food. In this he found that it contained 4.92 grammes more of dry nutritive substance than 100 drone-cells, and 3.26 grammes more than those of workers. Testing in every way the food of the queen, there can be no doubt that it is the richest and best from the commencement.

Now, if the food were a secretion similar to milk, it would always be the same, or at least it would vary to a very trifling expense; but as it varies as greatly as Dr. Planta has

shown, and has chemically proved to be different in its composition, there can be no doubt that it is a digested food elaborated in their chyle-stomach, and that the bees at will vary the ingredients thereof to suit their particular purpose. They can voluntarily add the necessary ingredients, such as pollen, honey, and nectar, more or less diluted with water.

So far as can be ascertained there do not appear to be any particular bees set apart for the purpose of feeding particular grubs, but that up to a certain age the feeding capacity is the same in all cases. We suppose that the bees must have the voluntary power of supplying one kind of food or the other as may be wanted.

This subject is a very important one, because upon it, to a great extent, is based the rearing of queens. The question naturally arises, are queens that are reared by natural means as good or better than queens reared otherwise? Now, I always maintained, and I think I have good reason for maintaining, that queens should be reared from eggs, because they get the better food from the very first day when the eggs hatch. The analysis of Dr. Planta, and the conclusions he comes to, go a great way in favor of that theory.

Queens must be better if reared on the best food from the commencement. I have known queens started on larvæ four days old. If a queen-cell is started after the fourth day, there has been one day in which the development of the ovaries has been arrested, and she can never make a good queen. Also microscopically Dr. Planta has been able to show that the worker larvæ receive this digested food for the first three days, and after that pollen and honey; drone larvæ are reared after the fifth day; while the royal food is always a chyle food, and never has either pollen or water mixed with it.

I think I have now placed this matter before you as fully as I am able to do. It appears to me that we may now look upon this question as decided, namely, that the food is produced in the chyle-stomach of the bee, and is not a secretion. I do not wish it to be understood that the secretion of the glands has nothing to do with the food, because Schonfeld, Holtz, and others admit that the secretions from the glands are added to the chyle-food, but are not the actual food itself, which consists of digested pollen and honey. The results of the investigations referred to will be published in Germany in about a fortnight's time, and I hope then to be able to say something more on the subject in the columns of the *Bee Journal*.

It is supposed that the workers that became fertile had received an extra large proportion of rich food. Instead of being weaned at the proper time, the rich food had been continued to them beyond that period. If a worker were fed thus for four days, the organs would have one day's development. In an ordinary worker they were stopped on the third day.

For the American Bee Journal.

The Voice of Spring.

MISS EDNA A. THOMPSON.

Now we hear the voice of spring
In the song the blue-birds sing;
Hear the "humming of the bees"
Through the budding forest trees,
Going to and from the flowers
In the morning sunlit hours.

Watch the cleaning of the hive,
Where the busy workers thrive;
How they guard their little store,
From the robbers at the door;
Working on from day to day,
Stopping not to rest or play.

When the linden comes in bloom,
Then they work from morn till noon,
Thankful for the light or shower;
And obey their Sovereign Power,
Something as the human race;
Though, perchance, with better grace.

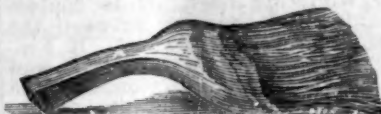
Clark's O.

For the American Bee Journal.

The Yucca or Spanish Bayonet.

W. A. PRYAL.

These plants are quite numerous on the mountains and foothills in the southern part of California, and when in bloom, their white crests can be seen for miles, towering above all else. The early Catholic missionaries, when they first came to California, called this plant "Our Lord's Candle Stick." W. W. Bliss remarks thus:—I have seen it stated that the bees gather large quantities of honey from this plant, but I do not think that this



YUCCA BRUSH.

is the case, although I have seen bees at work on the flowers. The most important use of this plant to beekeepers, is the brushes which are made from the leaves that grow at the bottom of the plant. These brushes are decidedly the best thing that has yet been discovered for brushing bees off from the combs in extracting; they are a vegetable fiber, soft and pliable, yet almost indestructible, and never come loose in the "handle," no matter how much they are exposed to the weather.

There are several varieties to be found growing through California, Arizona and Utah. There is one variety found in Arizona, and though not so stately as the above described, it is, nevertheless, more useful, as the fiber of it is now being made into paper of a very fine quality, which commands a high price in the market. We have not learned that it is yet to be had in large quantities in the market. Several other important uses are made of this last-mentioned variety. North Temescal, Cal.

For the American Bee Journal.

Cost of Cellar-Wintering of Bees.

W. Z. HUTCHINSON.

I believe that one of the unwritten laws of literature is, that no author shall defend his own works. I also believe that we bee-keepers are a law unto ourselves—we care more for truth than for some of the hair-splitting rules of authorship—and so strong is my faith in this belief that, in the conclusion to my little book, I announced that I should hold myself in readiness to explain and defend my views, or, if necessary, acknowledge my errors. I will now fulfil this promise.

First, I wish to thank my friends Clarke and Cook for having noticed my little book so kindly and so fairly. As one of the principal criticisms is that I have placed the cost of cellar-wintering at too low a figure, I will "explain and defend." Before doing this, however, let me show Mr. Clarke what good company he has. I have received a good, long letter from (and a sprig of orange blossoms) Mr. Poppleton, of Florida. After stating how completely his views agreed with mine in regard to the importance of spring protection, even going so far as to say, "I would no more think of trying to keep bees without spring protection in the short, changeable seasons of northern Iowa or Michigan than I would without movable comb hives," he also says: "Ain't you a little careless or wild in the statement that 'the saving of stores in cellar-wintering will pay for the expense four times over?' Compared with unprotected, out-door wintering, you are correct; but so far as my experience goes, the difference in the consumption of stores between the cellar and a thoroughly-packed colony out-of-doors, is too small to be considered. The only reliable statistics that I have seen upon this subject are those published by A. G. Hill, of Indiana. If I remember correctly, these tables cover several years of experiments, with an average of say 50 to 75 colonies each year; and the average difference between cellar and out-door wintering was, I think, not far from only one pound per colony. This, of course, applies only when hives are properly protected; not where the work is only half done."

W. F. Clarke says: "Let Cyula Linswik, A. G. Hill, A. I. Root, and other successful out-door winterers give us their figures, and I do not think they will sustain this strong assertion."

While Cyula Linswik has been successful in wintering bees out-of-doors, her experience in cellar-wintering is, I believe, limited to a single experiment with only one to two colonies; hence she has been unable to make any comparisons upon the point under discussion. Of course if her bees consume but little if any more honey than the cellar-wintered bees of somebody else, such testimony would be in point, provided other things were equal; but there are so

many varying circumstances that, to my mind, the only satisfactory evidence is that obtainable by comparative experiments in the same apiary, similar to those made by Mr. Hill.

As we approach the equator less protection is needed by bees, until a point is finally reached where chaff hives and cellars never come. Before this point is reached, however, there is another point where some protection is needed in winters; where chaff hives and the various kinds of packing are probably a sufficient shield against the cold; and by means of which bees can be wintered to better advantage, and it is likely, with no greater consumption of stores, than in a cellar; but it must not be forgotten that Messrs. Root and Hill live nearer this point than do Mr. Clarke and myself.

I met Mr. Root last March at the home of Prof. Cook, and as the wheels rattled over the frozen earth, and the frosty air nipped our ears and noses when on our way to the station, Mr. Root exclaimed: "Well, I declare, if this is the kind of weather you have up here, at this time of the year, I don't know but I, too, should favor cellar-wintering if I lived here. Why, the frost has been out of the ground at our place for two weeks." I will admit that the weather was unusually severe just then, but it was two weeks later before the frost was out of the ground at this place.

At the Michigan State Bee-Keepers' Convention held at Lansing in 1884, the question of "Saving honey by cellar-wintering" was thoroughly discussed; and the weight of the testimony indicated that wintering bees in a cellar effected a saving of from 5 to 10 pounds of honey per colony. Mr. Root suggested that a good chaff hive would give almost as good results as a cellar, but was told by quite a number that he was mistaken.

Judging from my own experience, which I will admit, is not so decisive as it might be, consisting as it does only of general observations, and of several times being obliged to take honey from cellar-wintered colonies, and give it to those wintered out-of-doors, I should place the saving by cellar-wintering at about 4 pounds per colony.

Mr. A. G. Hill has given us some excellent tables showing the amount of stores consumed during the winter, when the bees were protected; but, according to the table in his paper for April, 1886, he has been wintering bees in the cellar only since the winter of 1883-84. Comparing the three years of cellar-wintering that are included in this table, with three corresponding years in the table showing the results of out-door wintering, I find that the saving by cellar-wintering averages 2 pounds and almost one ounce per colony.

The next step is to decide in regard to the expense of cellar-wintering. I had a cellar under one-half of my house. Last fall I dug out the other half at a cost of \$5, which enlargement furnished room for 100 colonies. The soil was hard clay, and as the

walls were given a slant of about 60°, no stone wall was needed. As the hatchway to the other part of the cellar also furnished an entrance to the new part, it is perhaps fair to assume that the bee-cellar cost \$10. The interest upon this amount is 70 cents, or 7 mills per colony. To carry the bees in and out the cellar, counting a man's time one shilling an hour, cost 2 cents per colony, and the apiary was 15 rods distant; hence, to winter my bees in a cellar costs 2 cents and 7 mills per colony.

Knowing that Mr. R. L. Taylor, of Lapeer, Mich., had built a new honey house having a cellar under it for wintering bees, I wrote him asking in regard to cost, etc. Here is what he says:

"My new bee-cellar, which will accommodate 250 colonies, should not be figured, I think, to have cost me to exceed \$50. Of course circumstances would make the cost vary greatly. I can easily put the bees into the cellar and take them out again for 2 cents per colony. Your plan of spring packing is all right, but can it be made popular?"

The interest upon the cost of Mr. Taylor's cellar would be 1 cent and 4 mills per colony; making the cost of cellar wintering to him 3 cents and 4 mills per colony.

Perhaps some one will say: Well, this is cheap enough, but how will it be if a cellar is built independent of any building, and expressly for wintering bees? In reply I will say that each bee-keeper must have a house, also a shop or honey-house, and the bee-cellar may be under one of these; but special, independent repositories need not be so very much more expensive. Mr. J. H. Robertson, of Pewamo, Mich., has an out-door cellar for wintering bees. It is double-boarded, and the space between the boards filled with sawdust. If I remember aright it cost about \$40, and will hold at least 350 colonies. The interest would be 8 mills per colony, carrying in and out, 2 cents, making the cost of cellar wintering to him, 2 cents and 8 mills per colony.

I know that bees can be carried into and out of a cellar for 2 cents per colony, and to the best of my knowledge a wintering repository can be furnished, in most instances, at a cost not greatly exceeding one cent per colony.

Fellow-bee-keepers, I may yet be compelled to put the saving by cellar wintering at a lower figure than I have, but I was neither "wild nor careless" when I placed it where I have; as, before making the assertion, I went over the ground fully as carefully as I have in this article, and felt that I spoke within bounds.

I presume few of the readers of my little book would imagine that I devoted a whole month exclusively to its writing. Each point was gone over with great care, and so hard did I work to have everything exactly correct, that I could scarcely sleep nights from waking to "think."

Since I have proved the importance of spring protection, I, too, have thought considerable about house-

apiaries, but that they should have been so almost universally abandoned is pretty nearly a knock-down argument against them. Perhaps Messrs. Vandervort and Foster have found some new "wrinkle."

There are two or three other points in Mr. Clarke's review that I should be pleased to notice, but this article is already too long, and I must wait until another time.

Rogersville, 6 Mich.

For the American Bee Journal.

Bee-Keeping a Healthful Occupation.

MRS. L. C. AXTELL.

All the way through my last letter in the BEE JOURNAL, I am made to say "my" when it should have read "our," as Mr. Axtell is the bee-man here, or rather, he and I are in partnership, as I think all husbands and wives should be if possible in all business, especially in the bee-business if they wish to succeed.*

But Mr. A. does not care to write any of his experience in bee-culture, and I rather like to write, and take a great deal of pleasure in reading communications from others. We have now 202 colonies of bees—not so many as formerly. It takes much of his time to make racks, hives, sections, shipping-crates, etc., besides overseeing work on the farm. I take it upon myself to do all the bee-work I can, partly for the out-door exercise, as it has been a great benefit to my general health. Before we kept bees there was 10 years and more that I suffered everything with indigestion. I had but little pleasure in my food, from the suffering that followed. I tried many remedies, but nothing helped me until I became interested in the mysteries of the bee-hive. I read everything I could get hold of far and near, trying to commit as much of it to memory as I could, and watching every chance to read what I could find to my husband, or mark for him to read. From that day when I began to forget myself and live for the bees, I began to have better health, and food digested better, until now for years I have been troubled but little with indigestion, and life has taken on a new beauty. I find I can be as successful, too, in the care of our home apiary as my husband can of our timber apiary.

But this spring, feeling rather better than usual, I have, with the help of an inexperienced girl, worked all of our 202 colonies, through clipping all the queens' wings except a very few that I could not find on the first trial; and preparing the bees for sections. The girl and I have taken pleasure with our 3-year-old black horse in a buggy, and having an early dinner, drive down to our timber apiary, 4 miles away, work through 12 to 18 hives, turning the frames around, as we winter them placed lengthwise of the hives (Quinby), and set up one inch from the bottom-board in large chaff hives; hunt out queens and clip wings, give more

brood-combs full of honey; return the chaff until time to put the sections on; and then go home tired but strengthened. We enjoy the trip more than if we had been to a picnic.

If we got no pay for bee-work, I fear it would after awhile become insipid and tiresome, but the honey—such piles of honey that always reward faithful work with the bee—seldom fails us, and what to be desired more even than honey is the cash that it brings to do good with. It is a real luxury—a luxury worth living and laboring for. Those of us who have learned to love God for all he has done for us, and what we expect to receive in the future, do not or ought not rest content to enjoy this knowledge alone, while there are millions of our fellow beings who have no knowledge of Him who made them, and are groping through this world in midnight darkness. I say it is a real luxury to have the wherewith to do a little for such people, and hope many of our brothers and sisters in bee-culture are also enjoying this blessed privilege.

Roseville, Mo. Ills.

[*It is all right to say "our" when there is a partnership, of course; but the clerk who prepared your letter for the press, knew nothing of your family history or connubial partnership. If you had slipped in the words, "My husband and I are the apiarists," all would have been plain.—Ed.]

For the American Bee Journal.

Transferring Bees from Box-Hives.

W. W. BENTON.

MR. EDITOR:—I wish you would give us a good method of transferring bees from old box-hives to frame hives. I have been looking for such an article for some time. Please do not refer us to printed books, but give it in detail in the AMERICAN BEE JOURNAL, for the benefit of its new subscribers.

Newry, Pa., May 3, 1887.

[The best time to transfer bees from the common to movable-frame hives is about the season of swarming, though it may be done on any warm afternoon, when the bees are actively at work.

A transferring board about the size of the frame should be prepared in advance, by making grooves of about $\frac{1}{2}$ an inch wide and $\frac{1}{4}$ of an inch deep, and about 2 inches apart. The spaces between these grooves should be cushioned with several thicknesses of cloth, to prevent the brood from being injured when the comb is laid upon it.

Transferring sticks should be prepared from some light, tough wood,

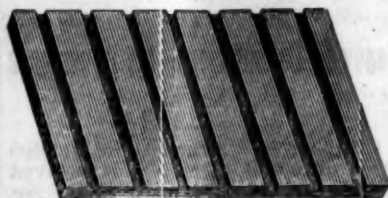
about $\frac{1}{2}$ inch longer than the frames are deep, and about $\frac{1}{4}$ of an inch square. Fasten two of these sticks together with a piece of fine annealed wire, so as to leave about one inch of



Wired Sticks for Transferring.

space between them; attach a piece of wire to the other end of one of the sticks, to be used in fastening when placed around the frame of comb. A small notch should be cut to admit the wire, and prevent slipping. These sticks should be made in pairs, and be kept ready for use.

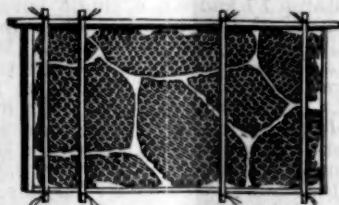
After smoking the bees at the entrance of a box-hive, remove it some distance from the old stand, leaving an empty hive or box in its place, to receive the bees that return from the fields; invert the hive, place an empty box or hive over it, of the same size and shape, wrapping a sheet or cloth



Transferring Board.

around where they come together, leaving no cracks large enough for a bee to escape. By gently tapping the hive for some time, most of the bees, with the queen, will enter the upper box. When they have nearly all left the hive, place the upper box with the bees on the old stand. Being alarmed and filled with honey, they may be handled without fear.

The old hive may now be removed to a convenient room or building and taken to pieces, by cutting off the nails with a cold-chisel and prying off



Frame of Transferred Comb.

the end, cutting the combs when taken out as near as possible to the size of the frames to be used. The transferring board should be placed upon a table or box, to be in a convenient position for working over it.

The pieces of combs containing honey may be placed at one side till some with brood are found; this should be put upon the transferring board, so that when the frame is placed in position over it, the brood may be nearly in the same position as it occupied in the old hive, and near the top of the frame, as that will be the warmest position in the hive. With a honey-knife cut these combs to make them fit. If more are wanted to fill the frame, use the combs of honey first removed from the hive. Then push the ends of the sticks, that have no wire attached, through the grooves, from the bottom of the frames, where the combs may need support; the other sticks attached, place on the top of the comb, and fasten the ends together at the top of the frame, to match the fastenings below. Place this frame in the hive, and proceed in the same manner with the next brood-comb, and let it occupy the adjoining position in the hive, giving the frames containing honey the outside position on either side. The honey from pieces of comb not used, and especially from all drone comb, should be removed with the extractor.

Carry the new hive to the old stand, and empty the bees out of the box on a sheet, in front of the hive. See that the queen, as well as all the bees, enter it. To prevent robbing, the entrance should be contracted; and in two or three days, when the bees have fastened the combs, the transferring sticks should be removed. Always work slowly with the bees, and avoid jarring.

As several have asked to have Mr. Heddon's plan of transferring repeated, we give it below:

About swarming time I take one of my Langstroth hives containing 8 frames of foundation, and with smoker in hand, I approach the hive to be transferred. First, I drive the old queen and a majority of the bees into my hiving-box. I then remove the old hive a few feet backward, reversing the entrance, placing the new one in its place, and run in the forced swarm. In two days I find 8 new straight combs with every cell worker, and containing a good start of brood. Twenty-one days after the transfer, I drive the old hive clean of all its bees, uniting them with the former drive, and put on the boxes, if they are not already on. If there is any nectar in the flowers, the colony will show you comb honey. About the queens: I usually kill the forced queen as the bees run in.

I run them together as I would one colony in two parts. Now to the old

beeless hive; of course there is no brood left, unless a little drone brood, and we have before us some combs for wax, for more foundation, and some first-class kindling wood.

If you have no method by which you can use a full hive of frames, of full sheets of foundation, running a full swarm into them at once, by all means procure it without delay.

We hope this will be sufficiently "detailed" to oblige our correspondent. It should be remembered that every beginner ought to have a good "book" for convenient reference at all times.—Ed.]

Translated from Bienen Zuchter.

Honey Cakes, Cookies and Gingerbread.

J. DENNLER.

I consider honey as a food second to none, on account of its solubility in the blood, its power of providing for heating the body and maintaining life.

I strongly recommend honey as food for children, especially for those who are growing quickly, as it provides easily-digested food, changing their pale faces and languid condition to a ruddy hue and sound health.

To the old it gives heat. Do they wish to enjoy a green old age? Let them eat milk and honey. Crumble up white bread and pour on it liquid honey and cream. This is the most healthy, the most nourishing, and the most relishing breakfast.

In the following recipes the metrical system of weights and measures are changed to the English for convenience. The gramme (grm.) contains nearly fifteen and a half grains, the kilogram (k. g.) is two and a half pounds, and the litre nearly a quart.

Alsatian Gingerbread.—1 lb. (half k. g.) honey, 1 lb. (half k. g.) flour, $2\frac{1}{2}$ drams (10 grms.) of bicarbonate of potash. The honey must first be put on the fire in a sauce-pan till it begins to boil. It is then taken off the fire, and the flour well stirred up in it, and last of all the potash. If sweet gingerbread is wanted, you must whip up the white of an egg, and stir in $\frac{1}{4}$ of a pound (125 grms.) of syrup or honey.

Basle Cookies.—Prepare some dough as in the above (which will keep for a year in a cellar); mix it with $\frac{1}{2}$ pound of shredded almonds (5 grms.), $1\frac{1}{4}$ drams of orange juice (3 grms.), $\frac{3}{4}$ dram of lemon juice, 2 grms. of cinnamon, together with (1 grm.) $\frac{1}{4}$ dram of finely pounded cloves. The whole must be carefully kneaded together and sifted, so that there are no lumps, and then baked.

French Honey Cakes.—Heat in a sauce-pan $4\frac{1}{4}$ ounces (150 grms.) of pure sugar, and $\frac{1}{4}$ pint ($\frac{1}{2}$ litre) of milk. When the sugar is dissolved add 12 ounces (350 grms.) of honey and boil, mixing with it 1 pound (half k. g.) of fine flour, and 30 grains (2 grms.) of bicarbonate of potash. Knead the dough thoroughly, and

make a thick dough of it, and put it in a dish sprinkled with some flour, and bake for an hour.

English Honey Cakes.—Take 2 lbs. (1 k. g.) of honey, $\frac{1}{2}$ pound (250 grms.) of fresh butter, the juice of two lemons, and some ground nutmeg. Melt some butter and well mix the ingredients together. Take 2 pounds (1 k. g.) of flour and make a dough, which must be lightly and carefully rolled out into cakes about $\frac{1}{2}$ of an inch thick. Cut it in pieces, and bake them lightly in butter.

Honey Fruit Cakes.—Take 4 eggs, 5 tea-cups of flour, 2 tea-cups of honey, 1 tea-cup of butter, 1 tea-cup of sweet milk, 2 tea-spoonfuls of cream of tartar, 1 tea-spoonful of baking soda, 1 lb. (half k. g.) of raisins, 1 lb. of currants, 1 tea-spoonful of cloves, 1 tea-spoonful of cinnamon, 1 tea-spoonful of nutmeg. Bake in an oven with a slow fire. These cakes will keep good for months.

Honey Tea-Cakes.—1 cup of strong honey, $\frac{1}{2}$ cup of thick white cream, 2 eggs, $\frac{1}{2}$ cup of butter, 2 cups of flour, $\frac{1}{2}$ tea-spoonful of soda, 1 tea-spoonful of cream of tartar. To be made into dough and bake slowly.

For the American Bee Journal.

Honey on Commission—My Experience

R. V. MUIR.

I shipped to a large city 16 Heddon cases of comb honey, and received returns for the same at 14 cents per pound for a certain amount, and 10 cents per pound for the balance, which was termed in the returns as "damaged sections." I was offered 15 cents per pound at home before shipping it. The retail price in that city was 25 cents per pound.

Some months after I had occasion to visit the same city on business, and found some bee-keepers who had wholesaled their honey at 20 cents per pound. Now the question naturally arose, why was not my honey sold at the regular wholesale price, provided it was as good in all respects as the other? It was a very fine article of pure linden honey.

Since then I have not shipped any honey, and never intend to do so. I have worked up my home market, and on March 7 I had not a single pound of extracted honey, and only a few sections filled with fall honey. My extracted honey sold at 10 cents per pound, and the comb honey at 15 cents per pound. I called this my wholesale price to grocers, and all others I sold more extracted in 50-pound kegs than in any other way. All that came to the apiary purchased at the above prices, without regard to quantity. Three-fourths of the crop was sold at home. Some may think that it was unfair to deal in this way with the grocers, but my object was to make the farmers come and buy of me instead of the grocers (as they charged 15 cents per pound for extracted honey, for which they only paid 10), and I succeeded. My honey

was genuine, and my customers knew it.

BOOMING THE BUSINESS.

What would we think of a banker who, after he had bought State or county bonds at a certain discount, and then sent them to New York or some other commercial centre, and sold them for 10 or 15 per cent. advance, and then rush to a printing office and have it put in the first daily paper issued? Would not the community as one man say that he was a fit subject for a lunatic asylum? Certainly, and the verdict would be correct. Well, this is just what many bee-keepers are doing, ignorantly perhaps, especially those who have just commenced the business—mere tyros in the art—and "happened" to have "good luck" from 2 or 3 colonies, not considering for a moment the average difference between 2 or 3 colonies and two or three hundred colonies.

All have doubtless often seen something like the following: "From 35 to 55, and 3,000 pounds of honey." While such reports may be true, it is an indirect way of "booming" the bee-business, which is at least misleading. The country is strewn with apiarian wrecks, then why "boom" the bee-business to the detriment of those who wish to follow it as a pursuit?

I have been a reader of the BEE JOURNAL for years, and intended to keep silent, and let other correspondents do the "gushing" and "booming," but I thought the time had come to say something on the other side.

Watson, Mo.

Read at the Oneida Co., Convention.

Can we Control our Honey Market?

JOHN ASPINWALL.

This subject seems to be agitating the minds of many (or I might better say a few) of the prominent bee-men at the present time. It is an important subject, and one worthy of much thought. We may, by combining to control the market, do ourselves some good, but the chances are that we may do ourselves much harm. To assert that we can so control the honey market as to place the price where we please, is preposterous; and to my mind so far from possible, under the present condition of things, as to lead me to think that some other motive prompts the discussion.

Let me put the facts more plainly before you: What is it that regulates trade? What is it that causes fluctuations in any business not controlled by a speculative board, as in the case of stocks and grain? I answer that it is supply and demand. Coal is controlled, we know, by great combinations who place the price where they please to a certain limit, until some firm drops out, and cut-throat prices are the order of the day, to the detriment of all concerned. But is it to be supposed that because this combination owned all the coal

fields in a certain very large district, that it could put the price of coal to \$10 per ton? No, they could not hold those prices three days before coal would be coming in from West and South and North and East to fill the markets at such a price as the market will allow. Controlling a market is a preposterous proposition, if we have not demand to act as the chief factor.

The honey interest has not the advantages which exist in other industries, such as iron, coal or petroleum; for in the first instance mines and wells can be bought outright and controlled, but who can buy up the flowers of the field, or who control the flow of nectar? Only He, under whose providential care bee-culture always rests.

Suppose that the members of the Oneida Bee-Keepers' Association were combined together, and declare that section honey should be sold by the members for not less than 20 cents per pound for the best quality, and I was an outsider not belonging to your association. Is there any law to prevent me from bringing my own honey, and as much more as I chose to buy in other parts, and selling it under your very noses at 18 cents a pound? Where would you get your money from to continue your business, if you found buyers loath to pay 20 cents per pound for the same article they could obtain from me at 18 cents? I leave the answer to yourselves.

What would you think of a lot of enthusiasts getting together to control the egg market, in country towns and elsewhere? How many farmers' wives would they control when it came to the question of selling a dozen eggs to pay for a new shawl, or to buy bread for the children? In this case the egg men have an advantage over the honey men, in that eggs are a far greater necessity than honey, and consequently there is a constant demand.

Suppose that a man depended on honey production for a living, and the combination of bee-keepers, to which he belonged, should say the honey market must be 20 cents, and some fellow comes along offering honey at 18 cents in this man's market, and gluts it. Where is the member to get bread from? He will go out of the bee-business next year, and the fellow will reap the harvest in a market which the first bee-keeper has toiled so many years to create. Combination, you see, would be a curse there, instead of a blessing.

I offer the following suggestions, not as a solution of the problem, but something toward a solution: I would propose the formation of a honey company headed by some experienced men in the honey business, and the establishing of head-quarters in New York city with branch establishments at the different centres of commerce. This to be a stock company that shall buy honey outright and not sell on commission, and whose principal work shall be the creation of a market by circulating pamphlets tending to educate people to the numerous uses to which honey can be put, and above all, inspiring the minds of the general

public with the absolute confidence that when honey is bought from this company and labeled "pure honey," it is "the truth, the whole truth, and nothing but the truth."

Barrytown, N. Y.

For the American Bee Journal

Moving Bees on the Cars.

ESAU RUSSELL.

I moved my apiary from Tiffin, Iowa, on April 6, to this place. The weather being cold when I started, I simply nailed wide boards on top of the hives tight, and placed screens in front, so that the bees could all come out if they wanted to; but very few bees came out until the next day; then the weather got warm and lots of bees would crowd the ventilators. I piled the hives 6 high in the car, and then packed tight, giving free circulation of air. I used a stock-car, and scarcely a comb was broken, as I placed little bunches of straws between the hives to prevent the sudden jar of the cars. The bees are doing well now, are building up rapidly, and some hives are half full of brood.

Ida Grove, Iowa, May 7, 1887.

Practical Farmer.

Honey as a Tooth-Preserver.

DR. W. G. PHELPS.

From a hygienic stand-point the value of honey is scarcely realized by the masses. Were it the case the use of it would have kept pace with the increased use of sugar for the past 25 years, which it has not. Years ago honey was to a great extent the sole sweetening medium, and the general health of civilized people was better than of the same classes to-day. The price of honey has gradually placed it among the luxuries, while sugar from its cheapness has been substituted in its stead. "Had the science of bee-keeping," says one writer, "been in its present advanced stage when the sugar-cane industry began its rapid growth, the use of sugar would have been considerably retarded by the contemporaneous march of its more wholesome competitor, honey, which then held the field."

By modern methods employed in bee-keeping, the purity and perfect cleanliness of honey is guaranteed, and had the rational culture of bees marched along with scientific sugar-making at an early date, we should have heard less of cheap and nasty substitutes (as the glucose mixtures for instance, manufactured potatoes, sawdust, rags, etc., frequently) for pure sugar and wholesome honey. The latter would have been produced at so low a rate that it would have held its own as the most delicious food, sweet-meat, and saccharine diet, either rich or poor could possess."

As some are already aware, honey is a perfect substitute for cane sugar in preserving fruits, in wine and beer

making, and for cider in manufacture of vinegar, while as a medicine in many forms, it is invaluable.

A leading medical and scientific journal advances the following good points in reference to its use: "But for cane sugar there would most probably not be so many millions of artificial teeth in daily use. As there are, the grape sugar of honey being at once fit for assimilation, whereas cane sugar (one has noticed how the eating of sweets increases thirst!) calls on a laggard saliva to convert it into grape sugar, and rests in nooks and corners among the teeth, fit food and breeding-ground for caries, schizomycetes, sphaeromycetes, and what not, which turn it into acid, the said acid acting upon the lime of the teeth and dissolving them."

Because cheap cane sugars have been taken into the stomach in unreasonable quantity, the liver has been unable to transform them, resulting in disordering both organs.

Dyspepsia and biliousness are probably caused more by the use of cane sugar than most of us think; indeed, Dr. Cheshire tells us that if cane sugar be injected into the blood, it is at once excreted, which is not the case with grape sugar. Let us then remember that it is only grape sugar which the system can at once use as heat-giving, fattening food, and this it is which honey supplies ready prepared for us by the bee in Nature's laboratory.

Honey will carry along with itself into the stomach for digestion more bread (starch, etc.) than butter, each helping the other; and a pound of honey at 8d. or 9d. per pound, will consequently go as far as 2 pounds of butter, costing 3s. Here then is decided economy.

It can be used for almost every purpose we now use sugar for; and by the principles of modern bee-keeping, it is becoming more plentiful and cheaper year by year. A great objection to its free use in past years was its comparative high price, owing to the restricted supply caused by the annual destruction of bees. This is now removed.

Another serious objection was the fact that honey disagreed with many people. The wonder is that it agreed with any one, for a common way of obtaining it (after smothering the bees) was to cut out the combs containing young bees and pollen, besides honey, and squeeze the whole in a cloth, straining the result for use.

It will thus be easily seen, without entering into details, how much objectionable matter was thus imported in the honey, which would tend to disorder delicate stomachs. All this is now changed. No brood (young bees) is now allowed by the bee-keeper to be hatched in the clean, snow-white sections of white bass-wood we see in the shop-windows of fruiterers and grocers who sell the honey, the whole of which honey and comb may be spread on bread and eaten, the cells being so thin that it takes six cell-walls to equal the thickness of ordinary note paper.

Galena, Md.

Local Convention Directory.1887. *Time and place of Meeting.*May 24.—N. W. Ills. & S. W. Wis., at Rockton, Ills.
D. A. Fuller, Sec., Cherry Valley, Ills.May 26.—West Lake Shore Central, at Kiel, Wis.
Ferd Zastrow, Sec., Millhome, Wis.May 27.—Darke County Union, at Greenville, O.
J. A. Roe, Asst. Sec., Union City, Ind.Dec. 7-9.—Michigan State, at East Saginaw, Mich.
H. D. Cutting, Sec., Clinton, Mich.

☛ In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

SELECTIONS FROM OUR LETTER BOX

Bees in Excellent Condition.—Charlie W. Bradish, Glendale, 3 N. Y., on May 9, 1887, says:

My bees have come through the winter in excellent condition. They were taken from the cellar on May 3 and 4. After examination I have found 100 colonies good and strong, and a few weak ones. They are at work to-day on maple blossoms. Clover has wintered well, and the prospect is good for a honey crop.

Results of the Winter in Vermont.—John H. Larrabee, Larrabee's Point, 40 Vt., on May 9, 1887, writes:

The past winter here has been unusually severe, and like other bee-keepers in this region, we have lost heavily. Personally, I have been very fortunate, having lost only 2 out of 33. The spring is very backward, and fruit has not yet blossomed. One lady has only 9 colonies left from 25; another apiarist lost 40 colonies out of 130. Mr. Manum has met with his usual success, but has lost a little heavier than usual; I think about 50 colonies out of 800. I am of the opinion that the Inter-State Commerce law will operate to the discouragement of large bee-associations, and all other organizations of a like character, but it may aid local societies. The bees are booming at present—making up lost time.

Finding the Queen in a Hive, etc.—Mrs. L. C. Axtell, Roseville, 40 Ills., on May 5, 1887, writes:

Our bees (my husband and myself are the apiarists) now are doing finely. Both those wintered out-of-doors and those in the cellar are still packed with straw, and will be until we put on sections. They are increasing in young bees very fast. We always aim to clip the queens' wings before many of the young bees are hatched out in the spring, as it is so much easier to find the queen, for young bees are so apt to run, pile up and fall off in bunches. When bees get to running we give up the search for that time, as it is not very safe to have the bees run, for there is more fear of loss to the queen. The queen is more

easily found at the first or second time the hives are opened in the spring; then with care she is in nearly every hive found the first time the combs are looked through. Use as little smoke as possible, and get to looking for the queen as quickly as possible after opening a hive.

Colonies Strong and Cross.—E. Pickup, Limerick, 3 Ills., on May 11, 1887, says:

Last fall I made a bee-house for my bees, and the result is that this spring my colonies are stronger than usual. It has finally become warm, so to-day I took from the hives the winter packing of sawdust and chaff, and the bees were soon outside. Some think I was foolish for keeping my bees packed until now; but I do not think so, as my bees are now strong and cross, and not weakened by poverty.

The Blank-Strip Section-Case.—J. W. Powell & Son, Mankato, 9 Minn., write:

In reply to Mr. J. J. Roe's letter on page 267, we wish to say that we do not desire to argue the matter of "priority" of the invention of the blank-strip section-case. We do not remember just the exact date when we first thought of making surplus cases that way, but we made a number of them last season, and gave them a thorough test, leaving some of them on the hives all of the fall; and we never have seen sections come off of the hive so clean. We never have intended to try to get a patent, however, but give other bee-keepers the benefit of our thought, in part payment for the many thoughts and ideas that have been so freely given to us. We hope this short explanation will satisfy Mr. Roe and all others; and thus we will leave the matter where it is.

Bees are Booming.—Lewis Werner, Edwardsville, 9 Ills., on May 8, 1887, writes:

Bees have commenced working on white clover. I am expecting a fine crop of honey this season. Bees are strong, and ready to swarm at any day. Swarming will be a little later than it was last year.

Non-Progressive Bee-Keepers.—E. W. Alexander, Esperance, 4 N. Y., writes:

I have kept from 50 to 300 colonies of bees for the past 25 years, and expect to continue in the business the remainder of my life, and I know that there has never been anything that stood so much in the way of selling our honey at a paying price, as that class of slipshod bee-keepers who give their bees little or no attention, and put their honey on the market in any shape, for any price they can get offered for it. I do not think there are many bee-keepers who keep 50

colonies or over, but what would be glad to have a law passed prohibiting bees from being kept within 25 rods of our public highway. That would wipe out all of these slipshod bee-keepers who will not Italianize their bees nor have their honey in a suitable condition for market; consequently they are a nuisance to the business. A man who cannot attend to his bees as they should be, 25 rods from a highway, ought not to keep bees.

Honey and Beeswax Market.

The following are our very latest quotations for honey and beeswax:

CHICAGO.

HONEY.—Sellers ask from 7 to 10 cts. for anything off in comb honey; this includes dark undesirable and crooked combs, and 2-pound sections. Good 1-lb. sections, 10@12c.; choice, 12@13c.
BEESWAX.—25c. R. A. BURNETT, Mar. 28. 161 South Water St.

DETROIT.

HONEY.—Best white comb, 11@12c. Market is nearly bare, awaiting the new crop.
BEESWAX.—23@24c.
May 11. M. H. HUNT, Bell Branch, Mich.

SAN FRANCISCO.

HONEY.—We quote: Extracted, white, 4@5 cts.; light amber, 4@5c.; amber, 4@5c. Comb, white, 12@14c.; amber, 7@9c. Demand good.
BEESWAX.—23c.
May 8. SCHACHT & LEMCKE, 122-124 Davis St.

CLEVELAND.

HONEY.—Choice white in 1-lb. sections, 12@13c.; second quality, 10@11c.; and buckwheat unsalable at 8@9c. Extracted, 5@6c.
BEESWAX.—25c.
Apr. 20. A. C. KENDEL, 115 Ontario St.

ST. LOUIS.

HONEY.—Choice comb, 10@12c. Strained, in barrels, 3@4c. Extra fancy, 3/4 more than foregoing prices. Extracted, 4@5c. Market dull.
BEESWAX.—Steady at 25c. for prime.
May 7. D. G. TUTT & CO., Commercial St.

SAN FRANCISCO.

HONEY.—We quote: White comb, 12@14c.; amber, 7@9c. Extracted, white, 4@5c.; light amber, 3@4c. Market quiet.
BEESWAX.—19@22c.
Apr. 16. O. B. SMITH & CO., 423 Front St.

MILWAUKEE.

HONEY.—We quote: Finest white 1-lb. sections, 12@13c.; choice white 1-lb., 11@12c.; choice 2-lb., 10@11c.; dark not wanted, and imperfect slow. Extracted, finest white in kegs, 6@7c.; good white in kegs and barrels, 6@7c.; dark, 4 to 4 1/2c. Demand good and market firm.
BEESWAX.—25c.
May 4. A. V. BISHOP, 142 W. Water St.

NEW YORK.

HONEY.—We quote: White comb, 9@12c.; dark 5@7c. California comb, 8@9c.; extracted, 5@6c. Sales large and demand good.
BEESWAX.—23@24c.
MCCAUL & HILDRETH BROS., May 10. 28 & 30 W. Broadway, near Duane St.

BOSTON.

HONEY.—1-lb. packages of white clover honey at 13@15c.; 2-pounds at 11@13c. Extracted, 5@7c. Sales slow.
BEESWAX.—26 cts. per lb.
Apr. 22. BLAKE & RIPLEY, 57 Chatham Street.

CINCINNATI.

HONEY.—We quote for extracted, 3@7c. per lb. Best comb brings 11@14c. per lb. Demand fair.
BEESWAX.—Good demand, 20@23c. per lb. for good to choice yellow.
Apr. 21. C. F. MUTH & SON, Freeman & Central Av.

By Using the Binder made expressly for this BEE JOURNAL, all can have them bound and ready for examination every day in the year. We have reduced the price to 60 cents, postpaid. Subscription for one year and the binder for \$1.50.



DRAKE & SMITH,

Successors to A. E. Manum, Bristol, Vt.

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ALL-IN-ONE-PIECE Sections, smooth inside and out. Comb Foundation, Alsike Clover Seed, and everything needed in the apiary.

Send for free price list, and samples of Sections and Foundation.

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ELEVEN Essays by eleven prominent bee-keepers, sent to all who apply.
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STAPLE brand, first quality, cannot be excelled. Satisfaction guaranteed. My Foundation is used and endorsed by Prof. J. H. Comstock, of Cornell University, G. W. Stanley, and many others. For Brood, 6 ft. to 1b., 40c. Light, 45c. Every sheet equal to sample; orders filled in rotation. 18E2t

WILBER G. FISH, Ithaca, N. Y.**QUEENS for 75 cts.**

I am ready to ship choice Italian Queens, bred from select mothers. Untested, 75 cts.; Tested, \$1.50. **E. F. LOCKETT,**
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100 COLONIES of Italian and Hybrid Bees for sale at bottom figures. Write for prices.
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100 Colonies of American-reared Italian Bees, best strain, strong, and in 10-frame wired Simplicity hives; for sale at \$8.00 per Colony. **Z. A. CLARK,**
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WE make a specialty of the manufacture of **DOVE-TAILED SECTIONS** of the White Poplar, the whitest and best wood for the purpose. We make all styles and sizes, but recommend the Side-Opening Sections as superior to any other. The great accuracy and fine finish of our Sections are the admiration of everybody. Sample 3 cents Price-List of Supplies free.

Address, **DR. G. L. TINKER,**
8Etf NEW PHILADELPHIA, O.

Western BEE-KEEPERS' Supply House.

We manufacture Bee-Keepers' supplies of all kinds, best quality at lowest prices. Hives, Sections, Comb Foundation, Extractions, Smokers, Crates, Honey Buckets, Vials, Feeders, Bee-Literature, etc., etc. Imported Italian Queens, Italian Queens, Bees by the lb., Nucleus or Colony, "Bee-Keepers' Guide, Memoranda and Illustrated Catalogue" of 48 pages FREE to Bee-Keepers. Address **JOSEPH NYSEWANDER,** DEER MOINES, IOWA.

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WE will furnish you **SECTIONS** as cheap as the cheapest. Write for price-list. Watertown, Wis., May 1st, 1887.

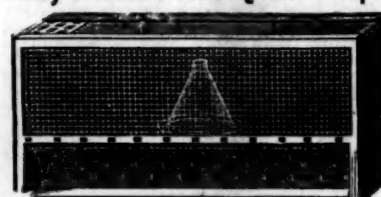
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ESSAYS

ON THE PRODUCTION OF COMB HONEY

WILL be given in the June issue of the **AMERICAN APICULTURIST**, by G. M. Doolittle, Dr. G. L. Tinker, Dr. C. C. Miller, and other prominent and well-known bee-keepers. Ready May 25. Price, 10 cts. Address, **AMERICAN APICULTURIST,** 18A4t WENHAM, MASS.

100 Colonies of Italian Bees, Strong, first-class in every respect, For Sale at reduced prices.
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Price, by Express, 50 cts.; by mail, 65 cts.; 12 in the flat, and one nailed (13 in all), \$3.50; 50, in the flat, \$12.00. Address

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WITH slotted honey-board, eight brood-frames, crate filled with 28 sections, all put up in good shape and painted 2 coats.

In lots of five, \$1.00 each. (Price-list free on application.)

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BEES! 300 COLONIES ITALIANS

READY for spring delivery at 60 cts. to \$1.00 per pound, according to time. Choice Queens and Brood cheaper in proportion. Also **ADJUSTABLE HONEY-CASE** and other Supplies. Circular free. **OLIVER FOSTER,** 11A4t Mt. Vernon, Linn Co., Iowa.

1880. Notes from the Bright-Band Apiary, 1887.

I WILL send Pure Untested Italian QUEENS, reared from imported mothers, to any address, at 80 cents each; or Tested for \$1.25. Satisfaction guaranteed. Send for terms on large numbers.

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Chapman Honey-Plant Seed
(*Echinops sphærocephalus*.)

We can supply this seed **POST-PAID** at the following prices: One-half ounce, 50 cents; 1 ounce, \$1; 2 ounces, \$1.50; 4 ounces, \$2; ½ pound, \$3; 1 pound, \$5. One pound of seed is sufficient for half an acre, if properly thinned out and re-set.

THOS. G. NEWMAN & SON,
923 & 925 West Madison St., CHICAGO, ILL.

THE NEW HIVE.

I have many more testimonials like the following, from Leading Bee-Keepers of this country. See 1887 Catalogue, to know what Prof. Cook, W. Z. Hutchinson, F. P. Stiles, T. L. VonDorn, F. Boomhower, and Doctors Tinker, Mason, Miller and others think, after many of them have thoroughly tested the New Hive:

ST. CHARLES, Illa., Feb. 7, 1887.
JAMES HEDDON:—Dear Sir: Your letter dated Feb. 3rd. is received. In reply I can say that I have watched closely, and with interest, the discussions pro and con in our bee-periodicals in regard to your New Hive. Although I have not as yet been prepared, as you are aware, to give your New Hive a personal test, yet I can say, in harmony with Dr. Miller's declaration, that your invention is one that requires no practical experience, on the part of any one familiar with the art, to recognize it at once as a hive of very superior merits. Having, during the past year, given your New Hive and its management very careful thought and study, I am constrained to say that I believe it to be as far in advance of all other hives as the well-known Langstroth is in advance of the old box or beehive. I say I believe this, and in keeping with that belief, it is my present purpose to adopt your New Hive just as soon as I can shape my plans to that end. In short, I feel as though I CANNOT AFFORD to use any other hive. Having used the Langstroth, with its best modifications, since the spring of 1855, it is with a feeling of considerable regret that this resolution will compel me to bid this old friend a final adieu.

It is apparent to me that the novelty of your New Hive is as wide a departure as its utility is superior to all others. Notwithstanding there have been hives with features resembling parts of your New Hive, still I have never seen a combination, nor am I aware of any that possesses its functions. And right here is just where the invention and patentability exist without which you certainly would never have received the many strong and well merited testimonials which I find in your Catalogue for 1887. Having for the past 25 years given the laws relating to patents more or less attention, I have no hesitation in repeating the word of Prof. Cook and G. M. Allen, that the "rubbish" which is already "lugged forward," in futile attempts to anticipate your claims, does not "deserve a critical man's attention."

As you seem to desire the foregoing for publication, I have taken especial pains to say nothing that I might possibly regret in the future.

Fraternally yours, **M. M. BALDRIDGE.**

FOR WINTER.

HARTFORD, N. Y., April 9, 1887.
We have had sleighing 134 days, and we are on runners yet. This is the first general flight my bees have had, and I had to fix the hives out of deep drift in order that the bees might have fair sailing. Eighty-five wintered in my old chaff hives came through with a loss of half, and many more weak. Nine in your hives packed in 6 inches of chaff, and setting 2 inches from bottom-board, not having a general flight in over 130 days, are all in good order. Four wintered on a single case are in best shape, with sealed brood. Stores the same in all the hives. Bees in the cellar are dying. **J. H. MARTIN.**

No Circulars sent out, unless asked for. Send address (plainly written) to

James Heddon,
DOWAGIAC, MICH.